

A new species and two new records of the genus *Pseudepipona* de Saussure, 1856 (Hymenoptera, Vespidae, Eumeninae) from China, with a key to the Chinese species

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Abstract

In present paper, a total of seven species of *Pseudepipona* is recognized from China, containing one new species and two newly recorded species. The new species *Pseudepipona* (*Pseudepipona*) *punctulata* **sp. nov.** is described and illustrated in detail. *Pseudepipona* (*Pseudepipona*) *kozhevnikovi* (Kostylev, 1927) and *Pseudepipona* (*Pseudepipona*) *straminea* (André, 1884) are first recorded from China. Four other known species *Pseudepipona* (*Pseudepipona*) *augusta* (Morawitz, 1867), *Pseudepipona* (*Pseudepipona*) *herrichii* (de Saussure, 1856), *Pseudepipona* (*Pseudepipona*) *lativentris* (de Saussure, 1855) and *Pseudepipona* (*Pseudepipona*) *przewalskyi* (Morawitz, 1885) are also diagnosed with some figures. Furthermore, a key to the Chinese species of the genus is provided.

Keywords

Pseudepipona, Eumeninae, China, new species, new records

Introduction

Pseudepipona de Saussure, 1856 containing 34 valid species and 9 subspecies, is mainly distributed in the Palearctic region, with two species and one subspecies in the Afro-tropical region and one subspecies in the Nearctic region (Girish Kumar et al 2017). Those Australian species placed in the genus by Giordani Soika and Borsato had been transferred to the genus *Euodynerus* Dalla Torre by Carpenter and Brown (2021). The genus *Pseudepipona* comprises two subgenera: *Deuterepipona* Blüthgen with 7 species and 3 subspecies and *Pseudepipona* de Saussure with 27 species and 6 subspecies (de Saussure 1853, 1855, 1856; André 1884; Morawitz 1885, 1895; Kokujev 1912; Kostylev 1927, 1940; von Schulthess 1934; Blüthgen 1942, 1951, 1955; Giordani Soika 1943, 1958, 1969, 1970, 1987; Blüthgen and Gusenleitner 1970; Gusenleitner 1971, 1973, 1976, 1977, 1994, 2012; van der Vecht and Fischer 1972; Kurzenko 1974, 1976). Among the above researchers who had contributed to the taxonomic study of this genus, Blüthgen, Giordani Soika and Gusenleitner greatly promoted the development of the genus, respectively. In China, four species of the subgenus *Pseudepipona* de Saussure were sporadically recorded (Morawitz 1885; Giordani Soika 1970; Castro and Dvořák 2009). In our collections of Chinese eumenids over the past years, 88 specimens of the subgenus *Pseudepipona* de Saussure were gathered from the areas belonging to the Palearctic region. A total of seven species are recognized, of which one species is new to science and two ones are new records to China. In present paper, the new species is described in detail and illustrated, and six other species are provided with diagnosis and figures. And a key to the Chinese species is firstly given.

Materials and methods

The specimens examined are deposited in the Chongqing Normal University (China) (CNU), China Agricultural University (CAU), the Museum of Hebei University (MHBUE), Inner Mongolia Agricultural University (IMAU), Inner Mongolia Normal University (IMNU) and Yunnan Agricultural University (YNAU). Descriptions and measurements were made under a stereomicroscope (Olympus SZ61). All figures were taken with Keyence VHX-5000 digital microscope and Photoshop CS 6 was used to make the plates. Body length was measured from the anterior margin of the head to the posterior margin of metasomal tergum 2. For the density description of punctures, “sparse” means that distance is larger than punctures diameter and “dense” means less than the diameter.

The abbreviations used in this paper are shown as follows:

- | | |
|-----------------------------------|---|
| A1 for antennal segment 1, | T2 for metasomal tergum 2, |
| A2 for antennal segment 2, | S1 for metasomal sternum 1, |
| T1 for metasomal tergum 1, | S2 for metasomal sternum 2, and so on. |

Taxonomy

Genus *Pseudepipona* de Saussure, 1856

Pseudepipona de Saussure 1856: 309, 893; Blüthgen 1951: 186–194; Giordani Soika 1957: 129–137; van der Vecht and Fischer 1972: 82–87; van der Vecht and Carpenter 1990: 1–62. Type species: *Odynerus herrichii* de Saussure 1856 by monotypy.

Leptepipona Blüthgen 1951: 171, 194. Type species: “*Pseudepipona tripunctata* (Fabricius)” [= *Vespa tripunctata* Fabricius, 1787], by original designation.

Metepipona Blüthgen 1951: 193. Type species: *Odynerus (Lionotus) peculiaris* Morawitz, 1895, by original designation.

Trichepipona Blüthgen 1951: 171, 193. Type species: *Odynerus lativentris* de Saussure 1855, by original designation.

Diagnosis. Body black, largely with yellow or ferruginous or white markings (Figs 8–9, 26–27, 35–36, 46), or even the whole body almost ferruginous or yellow in some species (Figs 1, 18, 53–54); vertex with one fovea in female; propodeum with a raised horizontal carina between dorsal and posterior surfaces (Figs 5, 12, 23, 32, 42, 50, 59–60); propodeum with lateral tooth-like carina in subgenus *Pseudepipona* (Figs 5, 12, 23, 42, 50, 59–60); in male of subgenus *Pseudepipona*, mandible with three teeth, and with a deep tooth gap between the first one and the second one (Figs 4, 14, 31, 40, 58); T1 narrower than T2 and basally without a transverse carina.

Distribution. Palearctic region.

Pseudepipona (Pseudepipona) punctulata Bai & Li, sp. nov.

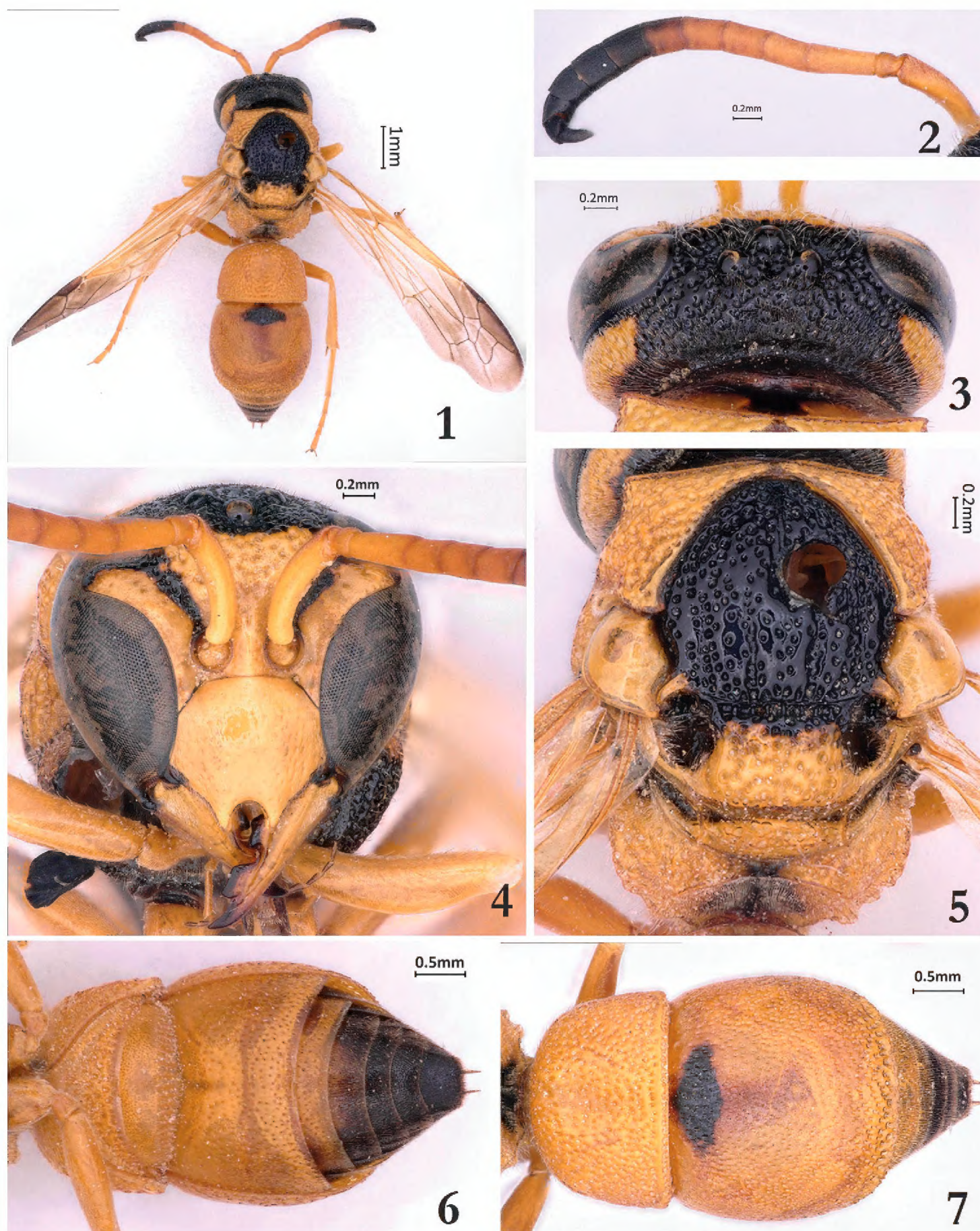
<http://zoobank.org/A39A2ABA-6BFE-466C-AF4B-E5B6F42FAF9A>

Figs 1–7

Material examined. Holotype, ♂, CHINA, Xinjiang, Akesu Prefecture, Baicheng County, Jinhui Industrial area, Ruifeng, 41.741°N, 81.643°E, 30.VII.2019, Lingzhi Zhao (CNU); Paratype, 1♂, the same as holotype (CNU).

Description. Male: body length 8.0–8.5 mm (Fig. 1), fore wing length 7.0–8.0 mm. Body mostly ferruginous (Fig. 1), only with the following parts black: inner margin and apex of mandible, two oblique narrow stripes on frons, vertex, A8–A13 (A7 ferruginous with black) (Fig. 2), mesoscutum, anterior margin of scutellum, ventral side of mesosoma, posterior face of propodeum medially, a transverse spot at the base of T2 and metasomal segments 4–7 (Figs 6–7); apex of fore wing dark.

Head. In front view head (Fig. 4) slightly wider than long, its side rounded; clypeus (Fig. 4) slightly wider than long (1.02×), with sparse punctures, interspaces polished, and apically with deep semi-circular emargination and width of emargination 1.3× depth; inter-antennal longitudinal carina present; frons with shallow and



Figures 1–7. *Pseudepipona (Pseudepipona) punctulata* sp. n., holotype 1 habitus in dorsal view, ♂ 2 antenna, ♂ 3 vertex, ♂ 4 head in frontal view, ♂ 5 mesosoma, ♂ 6 metasoma in ventral view, ♂ 7 metasoma in dorsal view, ♂.

moderate punctures; punctures on vertex and gena denser and deeper than those of frons; A13 hooked (Figs 2–3); occipital carina complete.

Mesosoma. In dorsal view, mesosoma about 1.4× as long as wide (Fig. 5); pronotal carina complete, without tooth-shaped protrusion and with protruding corner at shoulder, pronotum wholly with dense and reticulate punctures; mesoscutum with one

medial prescutal furrow and two postscutal furrows, with irregular punctures, interspaces between punctures polished, punctures denser at base; scutellum with moderate punctures and a medial longitudinal furrow; punctures on mesopleuron similar to pronotum; metanotum with dense and coarse punctures, interspaces between punctures slightly denticulate and protruding above scutellum (Fig. 5); horizontal carina between dorsal and posterior surfaces of propodeum complete and strong (Fig. 5), dorsal surface coarsely punctate and honeycomb-like, lateral carina tooth-like between dorsal and lateral surfaces, lateral surface with thin transverse striae.

Metasoma. T1 (Fig. 7) 1.45× as wide as long in dorsal view, densely and coarsely punctate, medially with slight depression, basally without lateral carina; T2 (Fig. 7) densely punctate, punctures slightly sparser and smaller than those of T1, and those at apex obviously bigger and denser; S2 mostly with sparse punctures except apex; apices of S2–S3 with moderate punctures; apex of T3 with dense punctures; other visible parts of metasoma 4–6 densely with minute punctures.

Female. Unknown.

Distribution. China (Xinjiang).

Remarks. This species resembles *P. (P.) przewalskyi* (Morawitz, 1885) with similar coloration (Figs 1, 54) and clypeus (Figs 4, 58). It can be distinguished from the related species and other members of the genus by the following character combination: pronotal carina medially without tooth-shaped protrusion (Figs 3, 5), and T2 with dense and coarse punctures (Fig. 7).

Etymology. The specific name *punctulata* is derived from Latin word: *punctulate*, referring to T2 with dense and coarse punctures.

Pseudepipona (Pseudepipona) kozhevnikovi (Kostylev, 1927), new record

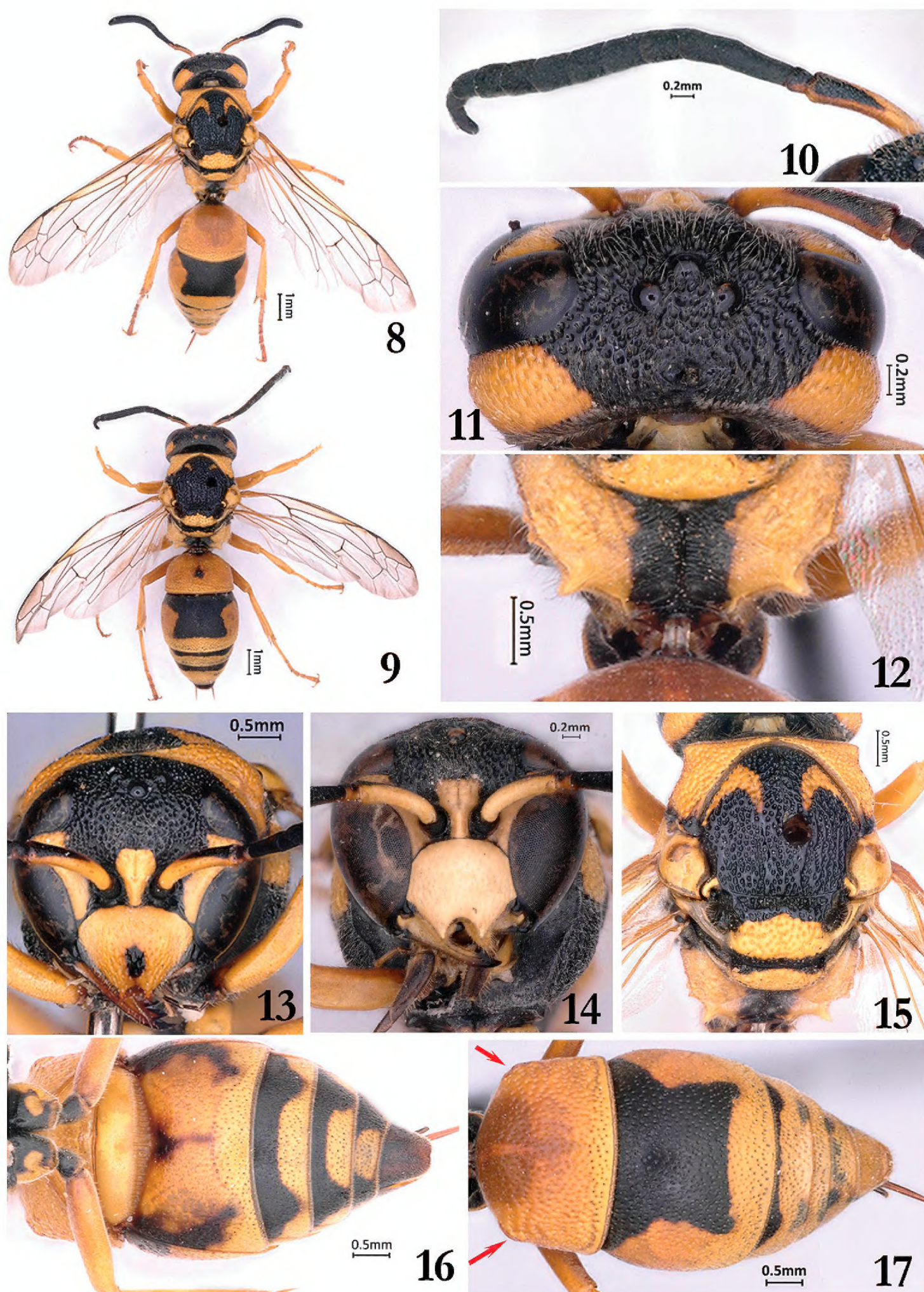
Figs 8–17

Odynerus kozhevnikovi Kostylev 1927: 78, fig. 4.

Pseudepipona kozhevnikovi; Blüthgen 1938 (1937): 295; van der Vecht and Fischer 1972: 84.

Material examined. 5♀♀, CHINA, Gansu, Zhangye City, Gaotai County, Heiquan Town, Yanzhibao Village, 39.607°N, 99.654°E, 1.VII.2019, Xue Zhang (CNU); 1♂, CHINA, Gansu, Jiayuguan City, Xincheng Town, Anyuangou Village, 39.787°N, 98.322°E, 22.VI.2019, Xue Zhang (CNU).

Diagnosis. Female body length 10.0–11.0 mm, male body length 9.5 mm (Figs 8–9); body largely ferruginous, with the following parts black: inner margin and apex of mandible, a small spot of clypeus in female, frons, vertex (Fig. 11), antenna except A1–A2 (Fig. 10), mesoscutum except two curved comma-shaped ferruginous spots, anterior margins of scutellum and metanotum, ventral side of mesosoma, posterior face of propodeum medially, coxae and trochanters largely, a large spot on the base of T2 and metasomal segments 3–7 except apical ferruginous bands (Figs 16–17); clypeus (Figs 13–14) wider than long; lateral carina of propodeum obviously tooth-



Figures 8–17. *Pseudepipona (Pseudepipona) kozhevnikovi* (Kostylev, 1927) **8** habitus in dorsal view, ♀ **9** habitus in dorsal view, ♂ **10** antenna, ♂ **11** vertex, ♀ **12** propodeum in dorsal view, ♀ **13** head in frontal view, ♀ **14** head in frontal view, ♂ **15** mesosoma, ♀ **16** metasoma in ventral view, ♀ **17** metasoma in dorsal view, ♀.

shaped (Figs 12, 15), horizontal carina between dorsal and posterior surfaces of propodeum thin and slightly indistinct; T1 basally with lateral short raised carina (Fig. 17).

Distribution. China (Gansu); Russia; Mongolia; Kazakhstan.

***Pseudepipona (Pseudepipona) straminea* (André 1884), new record**

Figs 18–25

Odynerus stramineus André 1884: 745; Kostylev 1940: 31; Gusenleitner 2001: 214.

Pseudepipona straminea; Blüthgen 1938 (1937): 295; 1951: 189; van der Vecht and Fischer 1972: 86.

Material examined. 1♀, CHINA, Xinjiang, Bayingol Mongolian Autonomous Prefecture, Near the desert road from Luntai County to Lunnan Town, 41.335°N, 84.205°E, 2.VIII.2019, Tingjing Li (CNU).

Diagnosis. Body length 10.8 mm; body sulfur yellow or obsolete green (Fig. 18), with the following parts black: inner margin and apex of mandible, two oblique narrow stripes on frons, vertex (Fig. 20), dorsal sides, A6–A12 (Fig. 19), mesoscutum except a through M-shaped yellow stripe, anterior margins of scutellum and metanotum, ventral side of mesosoma (Fig. 24), anterior margin and posterior face of propodeum medially, and basal transverse bands T1–T2; apical margin of fore wing dark; clypeus slightly longer than wide, with sparse and shallow punctures (Fig. 21); scutellum (Fig. 22) sparsely punctate, interspaces between punctures polished; lateral carina of propodeum tooth-shaped (Fig. 23), horizontal carina between dorsal and posterior surfaces of propodeum strong and distinct (Fig. 23); T1 basally without lateral carina (Fig. 25), each apex of T1–T5 with relatively denser punctures than other parts.

Male. Unknown.

Distribution. China (Xinjiang); western Asia.

***Pseudepipona (Pseudepipona) augusta* (Morawitz, 1867)**

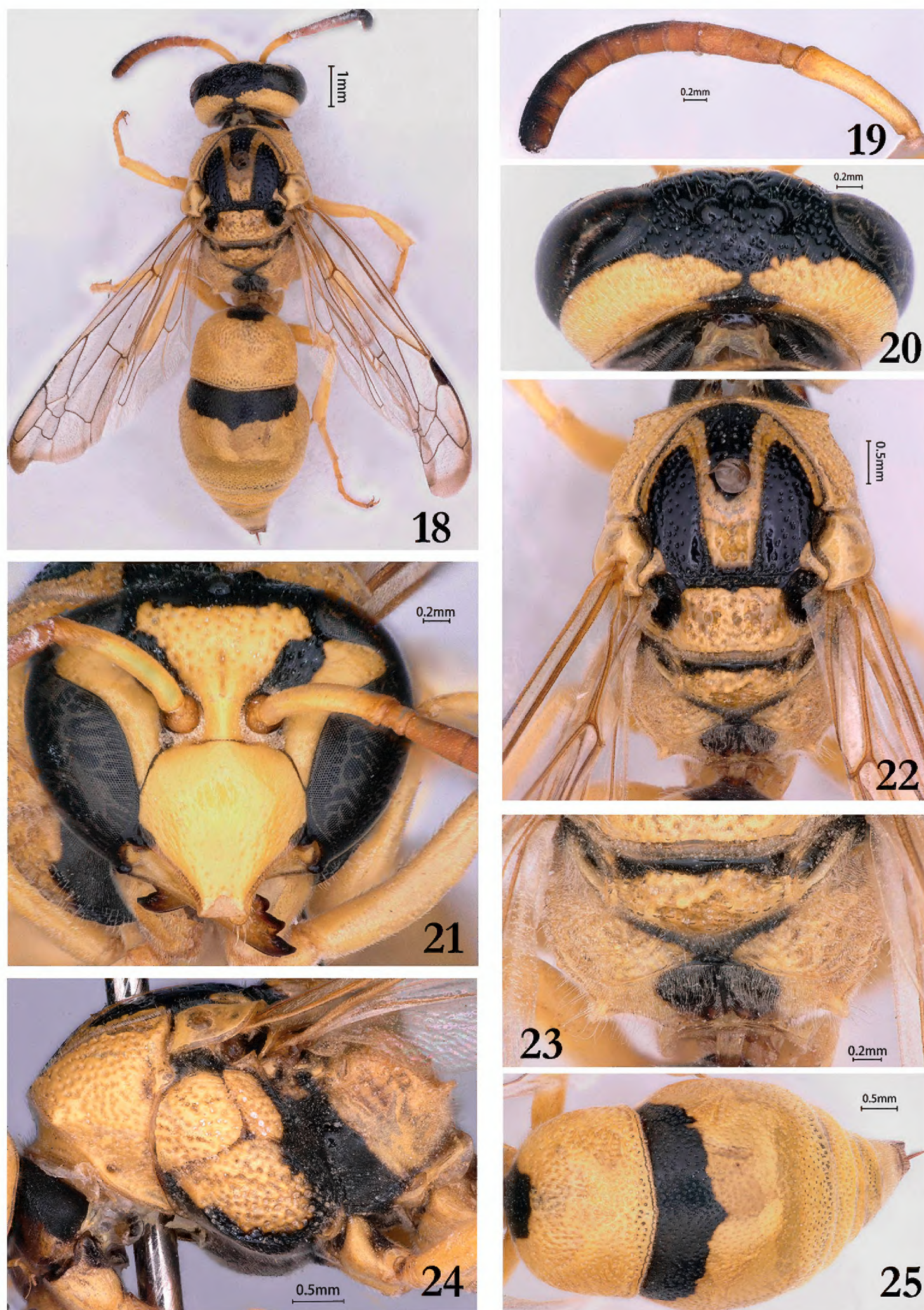
Figs 26–34

Odynerus augustus Morawitz 1867: 122; Dalla Torre 1889: 124; 1894: 9; Morawitz 1895: 468; Dalla Torre 1904: 1–108.

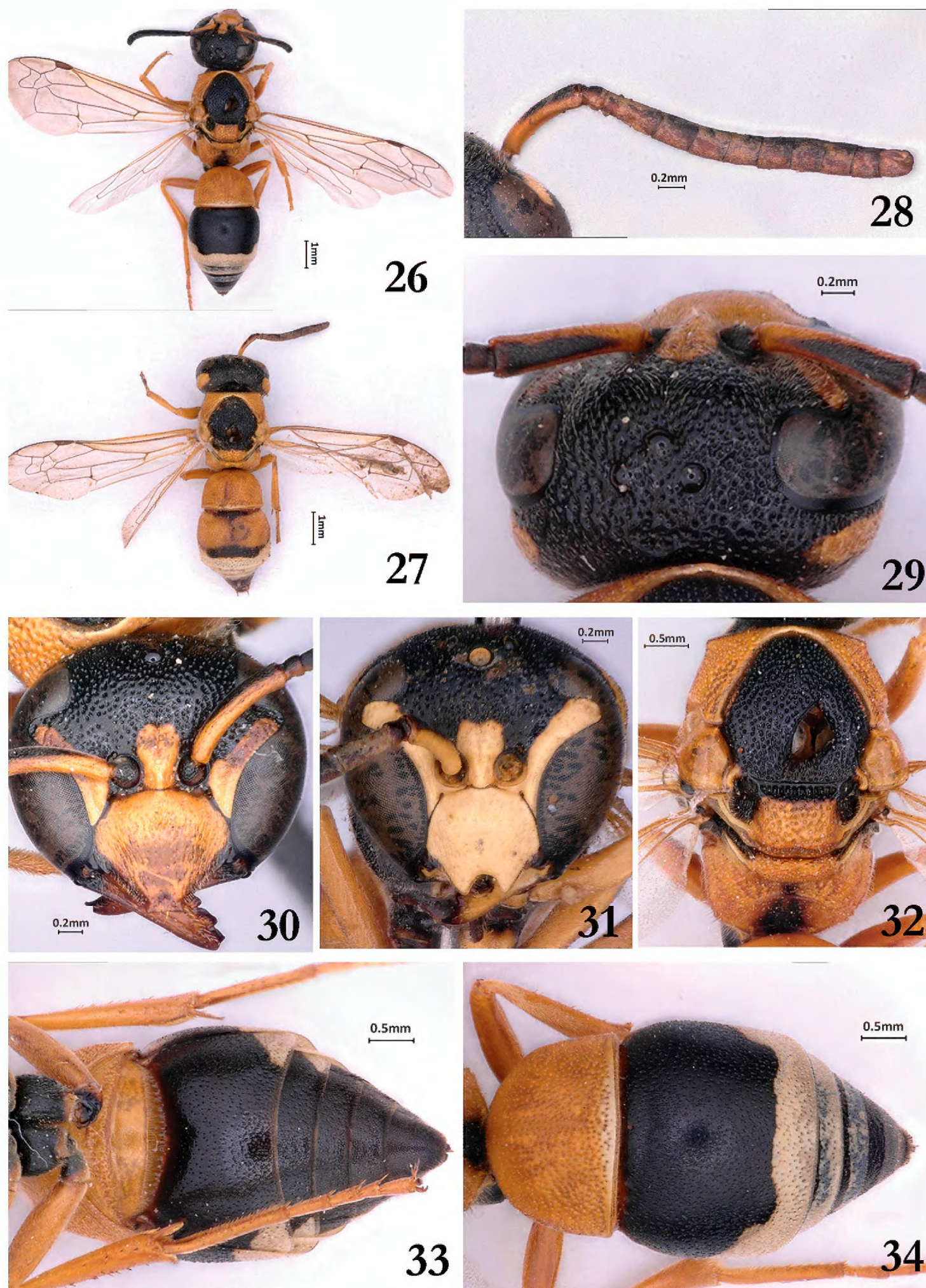
Euodynerus augustus; Blüthgen 1938 (1937): 279.

Pseudepipona augusta; Blüthgen 1961: 68, 134; van der Vecht and Fischer 1972: 83; Castro and Dvořák 2009: 298.

Material examined. 1♀, CHINA, Inner Mongolia, 70 kilometers west of Xilinhot City, Abaga Banner, 43°58'47.08"N, 115°9'16.82"E, 7.VIII.2014, Tuya Han (IMNU); 1♂, CHINA, Inner Mongolia, Ximeng Bai Banner, 10.VII.2001, Yuanchao Guo; 1♂, CHINA, Inner Mongolia, Xiwu Banner, 18.VII.2003, Xiuhua Lv (IMNU);



Figures 18–25. *Pseudepipona* (*Pseudepipona*) *straminea* (André 1884) **18** habitus in dorsal view, ♀ **19** antenna, ♀ **20** vertex, ♀ **21** head in frontal view, ♀ **22** mesosoma, ♀ **23** propodeum in dorsal view, ♀ **24** mesosoma in lateral view, ♀ **25** metasoma in dorsal view, ♀.



Figures 26–34. *Pseudepipona* (*Pseudepipona*) *augusta* (Morawitz, 1867) **26** habitus in dorsal view, ♀ **27** habitus in dorsal view, ♂ **28** antenna, ♂ **29** vertex, ♀ **30** head in frontal view, ♀ **31** head in frontal view, ♂ **32** mesosoma, ♀ **33** metasoma in ventral view, ♀ **34** metasoma in dorsal view, ♀.

1♂, CHINA, Inner Mongolia, Bayan Obo Mining District, 3.VIII.1991, Guodong Ren (IMNU).

Diagnosis. Female body length 8.3 mm, male body length 6.0–7.0 mm; body largely ferruginous and T1–T4 apically with white bands (Figs 26–27), with the following parts black: inner margin and apex of mandible, frons (Figs 30–31), vertex (Fig. 29), dorsal side of antenna (Fig. 28), mesoscutum, base of scutellum, ventral side of mesosoma, posterior face of propodeum medially, in female T2 except white apical band (Figs 26, 34), in male shot basal and subapical bands of T2 (Fig. 27), and S2–S6 or S7 except white lateral spots (Fig. 33); in male clypeus whitish yellow (Fig. 31); clypeus wider than long; A13 small, sharp and backward to the base of A12 (Fig. 28); lateral carina of propodeum indistinctly tooth-shaped (Fig. 32); horizontal carina between dorsal and posterior surfaces of propodeum strong and distinct (Fig. 32); T1 basally without lateral carina (Fig. 34).

Distribution. China (Inner Mongolia); Hungary; Slovakia; Ukraine; Russia; Kazakhstan; Mongolia.

***Pseudepipona (Pseudepipona) herrichii* (de Saussure, 1856)**

Figs 35–45

Odynerus herrichii de Saussure 1856: 309; Kokujev 1927: 72; Berland 1928: 35, 45.

Odynerus basalis Smith 1857: 58.

Pseudepipona herrichii var. *derufata* Blüthgen 1951: 184.

Pseudepipona variegata; Blüthgen 1952a: 352.

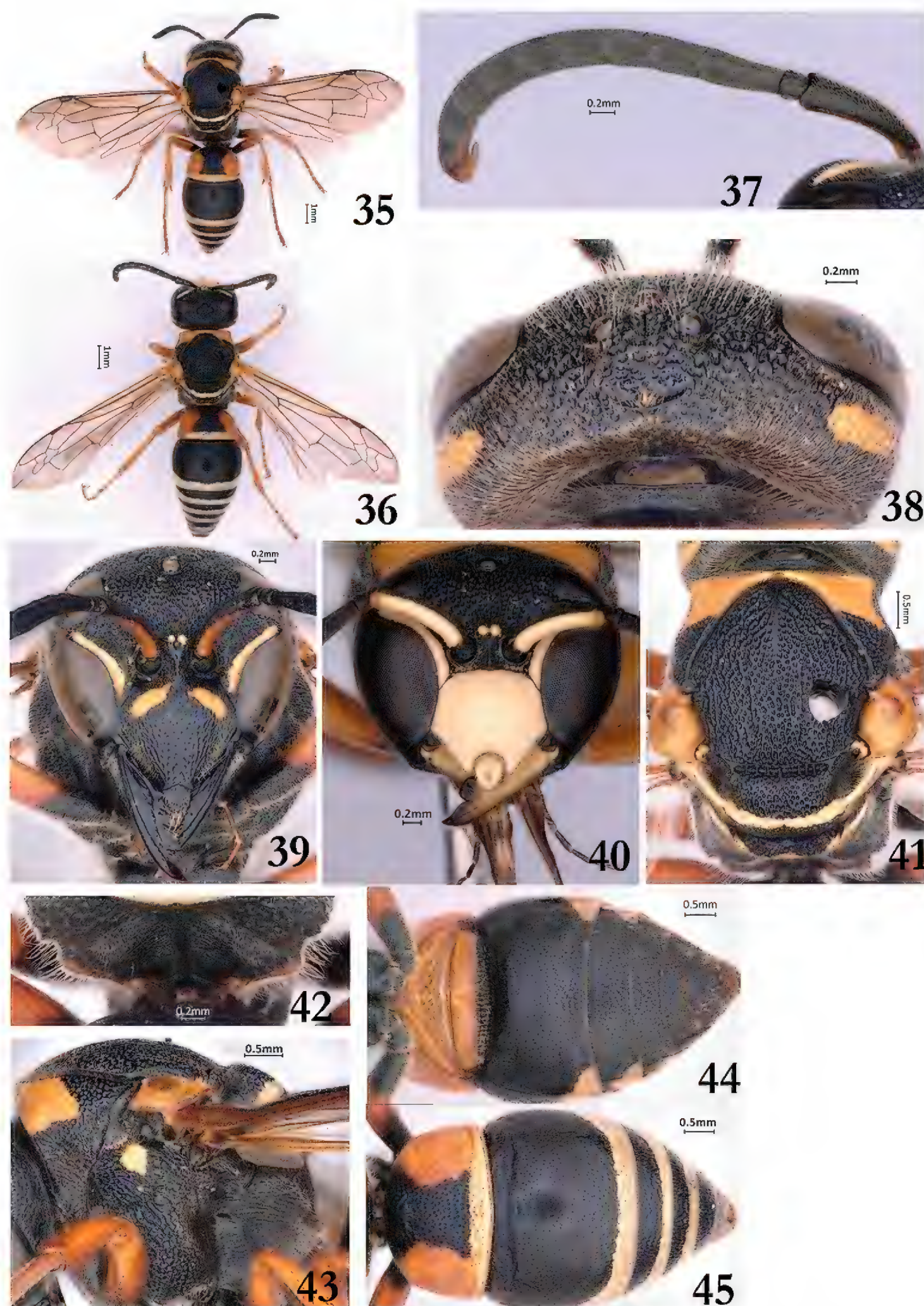
Pseudepipona variegata var. *derufata*; Blüthgen 1953: 6; 1955: 8; 1956: 7.

Pseudepipona herrichii; Giordani Soika 1958 (1957): 130; van der Vecht 1966: 164; Giordani Soika 1970: 143; van der Vecht and Fischer 1972: 83; Madl 1997: 825; Gusenleitner 2008: 38; Yildirim and Gusenleitner 2009: 939.

Material examined. 1♀, CHINA, Inner Mongolia, Alxa League, Helan Mountain, Yaoba Huangqukou, 38°35.712'N, 105°49.261'E, 27.VII.2010, Zejian Li; 2♀♀, CHINA, Inner Mongolia, Alxa League, Helan Mountain, VII.2010, Fangzhou Ma (YNAU); 2♀♀, CHINA, Inner Mongolia, Alxa League, Helan Mountain, Halawugou, 22.VII.2006, Tingjing Li & Haiyan Zhang (YNAU); 2♀♀, CHINA, Inner Mongolia, Alxa League, Helan Mountain, Shuimogou, 25–27.VII.2010, Fangzhou Ma (YNAU); 7♀♀, CHINA, Inner Mongolia, Alxa League, Helan Mountain, Ganshuwan, 5.VIII.2010, Fangzhou Ma (YNAU); 1♀, CHINA, Inner Mongolia, Alxa League, Helan Mountain, Huangqukou, 5.VIII.2010, Dingjie Zhang (YNAU); 2♀♀, CHINA, Inner Mongolia, Alxa League, Helan Mountain, Xiangchizi, 25.VIII.2013, Li Jiang (YNAU); 1♀, CHINA, Inner Mongolia, Ulan Qab City, Liangcheng County, Daihai Town, 21.VII.2012, Xin Zhou (CNU); 1♀, CHINA, Inner Mongolia, Tongliao City, Horqin District, Qinghe Town, 18.VII.2012, Xin Zhou & Ju You (CNU); 1♀, CHINA, Inner Mongolia, Aershan City, 12.VIII.1997; Guodong Ren; 1♀, CHINA, Hebei Paddock, 28.VI.1994, Guodong Ren (MHBUR); 2♀♀, CHINA, Inner Mongolia, Zhengxiang-

bai Banner, 5–27.VII.2002, Yuanchao Guo; 2♀♀, CHINA, Inner Mongolia, Ximeng-bai Banner, 22.VII–7.VIII.1980, Yuanchao Guo; 2♀♀, CHINA, Shanxi, Huanglong County, Shibao Town, 2.VIII.2012, Ju You & Yuan Bai (CNU); 1♀, CHINA, Shanxi, Baoji City, Mei County, Jinqu Town, 14.VIII.2015, Zhenxia Ma & Lingquan Zeng (CNU); 1♀, CHINA, Ningxia, Yinchuan City, Helan County, Jingui Town, 38.487°N, 106.410°E, 30.VII.2016, Zhenxia Ma & Xiaoqin Cheng (CNU); 1♀, CHINA, Ningxia, Jingyuan County, Liupanshan Town, 35.663°N, 106.285°E, 25.VII.2016, Zhenxia Ma & Wenkai Zhou (CNU); 1♀, CHINA, Ningxia, Shizuishan City, Pingluo County, Taole Town, Madagou Village, Sixth Team, 38.817°N, 106.742°E, 20.VII.2020, Qian Han (CNU); 1♀, CHINA, Hebei, Yu County, Xiaowutai Mountain, 11–17.VII.2002, 2001 Class of Biological Sciences (MHBUS); 1♀, CHINA, Shanxi, Huashan, 22.VIII.1962, Fasheng Li (CAU); 1♀, CHINA, Xinjiang, Fuyun County, Langgou, 1.VII.2002; 1♀: CHINA, Dazhao Mountain, 27.VII.1948; 2♂♂, CHINA, Inner Mongolia, Helan Mountain, Halau Shatangzi, 38°51.938'N, 105°55.550'E, 4.VIII.2010, Zejian Li & Junzhe Xue; 4♂♂, CHINA, Inner Mongolia, Helan Mountain, Shuimogou Hougou, 38°56.956'N, 105°58.611'E, 9.VIII.2010, Zejian Li & Junzhe Xue; 1♂, CHINA, Inner Mongolia, Helan Mountain, Gulaben Xiaosongshan, 39°05.011'N, 105°59.366'E, 30.VII.2010, Zejian Li & Junzhe Xue; 1♂, CHINA, Inner Mongolia, Alxa League, Helan Mountain, VIII.2010, Dingjie Zhang (YNAU); 1♂, CHINA, Inner Mongolia, Alxa League, Helan Mountain, Zhonggutian, 3.VIII.2010, Fangzhou Ma (YNAU); 1♂, CHINA, Inner Mongolia, Alxa League, Helan Mountain, Qianggangling, 8.VIII.2010, Fangzhou Ma (YNAU); 2♂♂, CHINA, Inner Mongolia, Alxa League, Helan Mountain, Shuimogou, 25–27.VII.2010, Fangzhou Ma (YNAU); 1♂, CHINA, Inner Mongolia, Alxa League, Helan Mountain South Temple, 11.VII.2005, Zhi Ling; 1♂, CHINA, Inner Mongolia, Alxa Ancient Town, 24.VIII.2013, Jian Zhu (YNAU); 1♂, CHINA, Inner Mongolia, Heiniugou, 23.VII.1990 (IMAU); 1♂, CHINA, Xinjiang, Altay City, Fuyun County, Kalatongke Township, Near S226, 46.916°N, 89.589°E, 20.VII.2019, Lingzhi Zhao (CNU); 1♂, CHINA, Xinjiang, Ili Kazakh Autonomous Prefecture, Gongliu County, Tiermutu, 43.433°N, 82.033°E, 28.VII.2019, Lingzhi Zhao (CNU); 1♂, CHINA, Xinjiang, Altay City, Aweitan Town, Koktobe Village, 47.721°N, 88.064°E, 21.VII.2019, Qian Han (CNU); 1♂, CHINA, Heilongjiang, 20 Mile Ferry of Nenjiang River, 2.VIII.2004, Guodong Ren & Wenjun Hou (MHBUS); 1♂, CHINA, Inner Mongolia, Ximeng Bai Banner, 9.VII.2003, Kai Shi; 1♂, CHINA, Inner Mongolia, Helan Mountain, 4.VII.2002, Xiaoshuan Bai (CNU).

Diagnosis. Female body length 10–12 mm, male body length 6.5–10 mm (Figs 35–36); body black and T1–T4 apically with whitish yellow bands (Figs 35–36), with the following parts ferruginous: in female lateral spot of clypeus basally (Fig. 39), one small spot on gena (Fig. 38), in male A13 (Fig. 37), base of pronotum (Fig. 41), tegula, parategula, legs except coxae, trochanters and bases of femora, lateral side of T1, and S1 (Figs 44–45); in male clypeus and mandible except apex (Fig. 40), one below elongate spot along inner ocular margin, one long transverse band of scutellum at subapex, one small upper spot on mesopleuron (Fig. 43), and posterior surface of metanotum whitish yellow; clypeus wider than long (1.05× in female, 1.11× in male); lateral carina of propodeum distinctly tooth-shaped (Figs 41–42); horizontal carina



Figures 35–45. *Pseudepipona (Pseudepipona) herrichii* (de Saussure, 1856) **35** habitus in dorsal view, ♀ **36** habitus in dorsal view, ♂ **37** antenna, ♂ **38** vertex, ♀ **39** head in frontal view, ♀ **40** head in frontal view, ♂ **41** mesosoma, ♀ **42** propodeum in dorsal view, ♀ **43** mesosoma in lateral view, ♀ **44** metasoma in ventral view, ♀ **45** metasoma in dorsal view, ♀.

between dorsal and posterior surfaces of propodeum thin and indistinct (Fig. 42); T1 basally without lateral carina (Fig. 45).

Distribution. China (Heilongjiang, Hebei, Inner Mongolia, Ningxia, Shanxi, Xinjiang); England; Spain; Switzerland; Germany; Austria; Belarus; Ukraine; Greece; Turkey; Syria; Armenia; Turkmenistan.

***Pseudepipona (Pseudepipona) lativentris* (de Saussure, 1855)**

Figs 46–52

Odynerus lativentris de Saussure 1855: 275; Berland, 1928: 37 (key), 52, fig. 69.

Pseudepipona lativentris; Blüthgen 1938 (1937): 279; 1951: 171, 193; 1952: 353; Giordani Soika 1953: 247; Blüthgen 1953: 6; 1956: 7; Giordani Soika 1970: 143; van der Vecht and Fischer 1972: 84; Castro 1986: 295; Yildirim and Gusenleitner 2004: 133; Castro and Dvořák 2009: 298.

Pseudepipona lativentris lativentris; Castro 1992: 27.

Material examined. 2♀♀, CHINA, Ningxia, Zhongwei City, Zhongning County, Majialiang Township, Shagou Village, 37.353°N, 105.572°E, 28.VII.2020, Qian Han & Qianchen Wang (CNU); 1♀, CHINA, Ningxia, Yinchuan City, Helan County, Yueyahu Township, Near the Gobi Desert in Beier Village, 38.627°N, 106.643°E, 22.VII.2020, Qian Han (CNU); 1♀, CHINA, Inner Mongolia, Hohhot, Hasuhai.

Diagnosis. Female body length 10.0–11.0 mm, body largely ferruginous (Fig. 46), this species greatly similar to *P. kozhevnikovi* (Kostylev, 1927) in coloration except mesoscutum without two curved comma-shaped ferruginous spots and metasomal segment 2 mostly black (Figs 47–52); clypeus (Fig. 48) as wide as long; in female apex of clypeus truncate, not emarginate (Fig. 48); lateral carina of propodeum obviously tooth-shaped (Fig. 50), horizontal carina between dorsal and posterior surfaces of propodeum strong and distinct; T1 basally with lateral short raised carina (Fig. 52).

Distribution. China (Ningxia, Inner Mongolia); Portugal; Spain, including Balearic Islands; Italy, including Sardinia; Switzerland; Morocco; Turkey; Armenia; Russia; Israel; Lebanon; Iran; Turkmenistan; Kyrgyzstan; Tajikistan.

***Pseudepipona (Pseudepipona) przewalskyi* (Morawitz, 1885)**

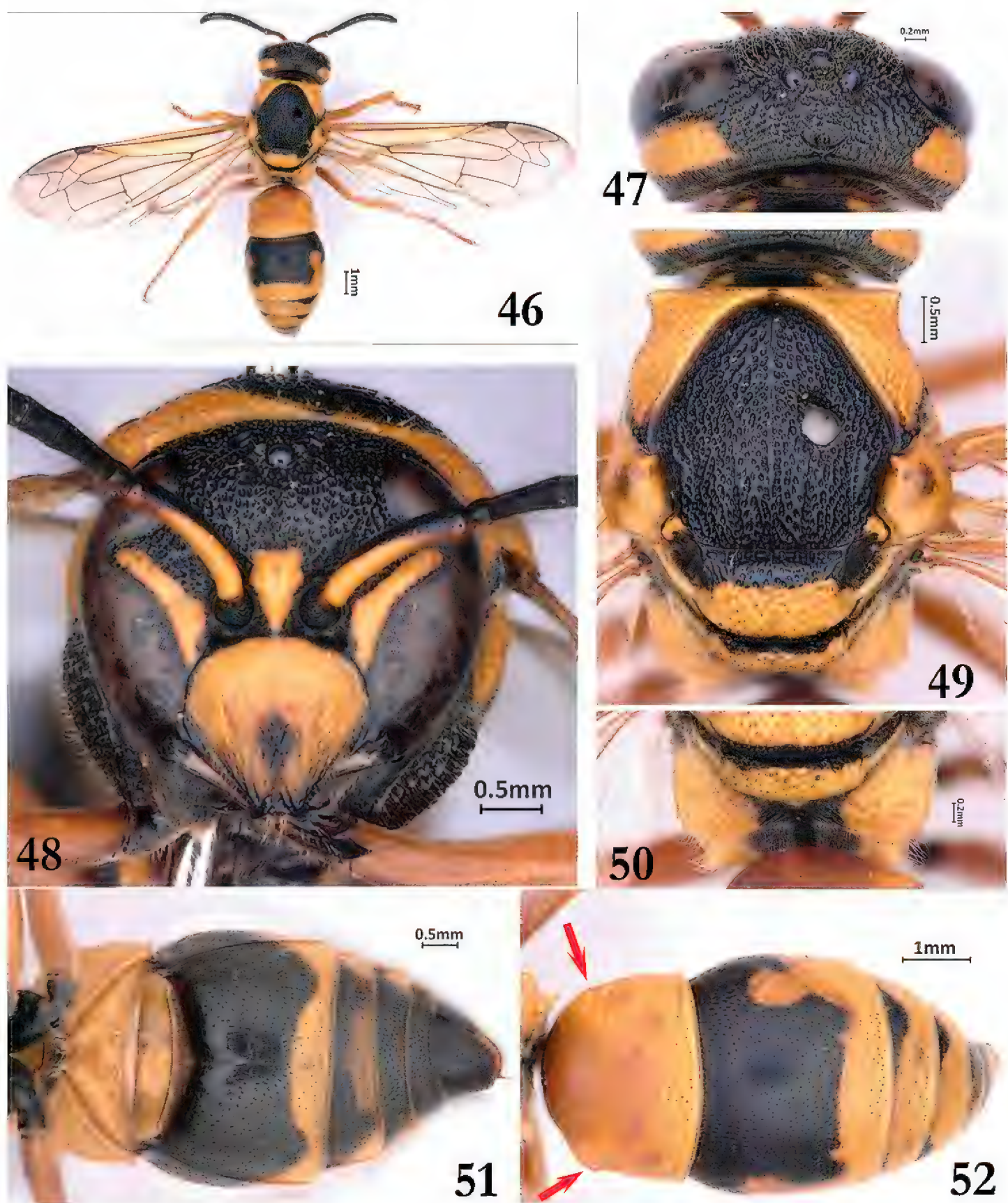
Figs 53–64

Lionotus przewalskyi Morawitz 1885: 161.

Odynerus tripunctatus; Giordani Soika 1935: 184, 192.

Odynerus tripunctatus var. *convergens* Giordani Soika 1935: 184, 192; Giordani Soika 1943: 36; 1973: 35; Borsato and Ratti 1999: 86 (syn. of *P. przewalskyi* (Morawitz)).

Pseudepipona nekt; Blüthgen 1938 (1937): 295; Giordani Soika 1943: 37 (*O. nekt* = *tripunctatus* sensu Giordani Soika 1935; 1952: 8, 39; Blüthgen 1952b: 19; Giorda-

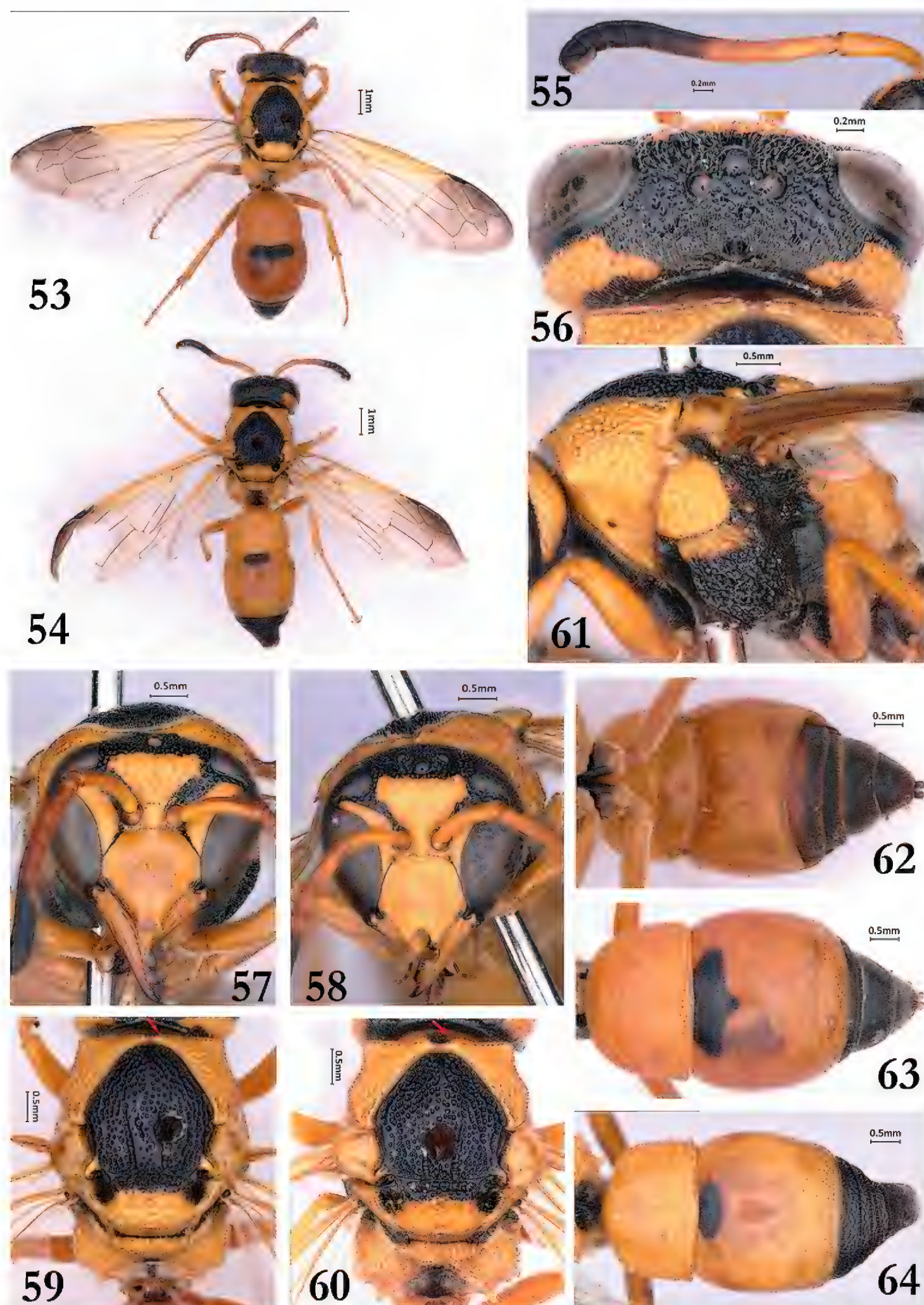


Figures 46–52. *Pseudepipona (Pseudepipona) lativentris* (de Saussure, 1855) **46** habitus in dorsal view, ♀ **47** vertex, ♀ **48** head in frontal view, ♀ **49** mesosoma, ♀ **50** propodeum in dorsal view, ♀ **51** metasoma in ventral view, ♀ **52** metasoma in dorsal view, ♀.

ni Soika 1958 (1957): 131–132; van der Vecht and Fischer 1972: 85; Guichard 1986 (1985): 213, 221.

Pseudepipona przewalskyi; van der Vecht and Fischer 1972: 85; Gusenleitner 1991: 631, 636; 1994: figs 7, 9.

Odynerus tripunctatus convergens; Giordani Soika 1973: 14; Borsato and Ratti 1999: 77.



Figures 53–64. *Pseudepipona* (*Pseudepipona*) *przewalskyi* (Morawitz, 1885) **53** habitus in dorsal view, ♀ **54** habitus in dorsal view, ♂ **55** antenna, ♀ **56** vertex, ♀ **57** head in frontal view, ♂ **58** head in frontal view, ♀ **59** mesosoma, ♀ **60** mesosoma, ♂ **61** mesosoma in lateral view, ♀ **62** metasoma in ventral view, ♀ **63** metasoma in dorsal view, ♀ **64** metasoma in dorsal view, ♂.

Material examined. 2♀♀, CHINA, Xinjiang, Akesu Prefecture, Kuche County to Baicheng County S307 4–5 km, 41.883°N, 82.801°E, 30.VII.2019, Jie Chen (CNU); 1♀, CHINA, Xinjiang, Akesu Prefecture, Baicheng County, Jinhui industrial area, Ruifeng, 41.741°N, 81.643°E, 30.VII.2019, Lingzhi Zhao (CNU); 2♀♀, CHINA, Gansu, Zhangye City, Linze County, Near Banqiao Town, 39.309°N, 100.409°E, 29.VI.2019, Xue Zhang (CNU); 1♂, CHINA, Gansu, Zhangye City, Linze County, Near Banqiao Town, 39.309°N, 100.409°E, 29.VI.2019, Xue Zhang (CNU); 1♂, CHINA, Xinjiang, Akesu Prefecture, Kuche County to Baicheng County S307 4–5 km, 41.883°N, 82.801°E, 30.VII.2019, Jie Chen (CNU); 5♂♂, CHINA, Xinjiang, Akesu Prefecture, Baicheng County, Jinhui industrial area, Ruifeng, 41.741°N, 81.643°E, 30.VII.2019, Lingzhi Zhao (CNU); 1♂, CHINA, Xinjiang, Akesu Prefecture, Baicheng County, Near the Charzi Town S307, 30.VII.2019, Lingzhi Zhao (CNU).

Diagnosis. Female body length 10.5–12.0 mm, male body length 9.0–11.5 mm; body mostly ferruginous (Figs 53–54), with the following parts black: inner margin and apex of mandible, two oblique narrow stripes on frons, vertex (Fig. 56), in male A6–A13 (A13 dark ferruginous) (Fig. 55), mesoscutum, anterior margin of scutellum, ventral side of mesosoma (Fig. 61), posterior face of propodeum medially (in female black area smaller) (Figs 59–60), a transverse spot on the base of T2 and metasomal segments 3–7 (in some specimens S3 basally ferruginous) (Figs 62–64); apex of fore wing dark; clypeus as wide as long; pronotal carina medially prominent and flat tooth-shaped (Figs 59–60); T1 moderately punctate, basally without lateral carina; T2 largely with few sparse and minute shallow punctures, and apically with denser minute punctures (Figs 63–64).

Distribution. China (Gansu, Xinjiang); Egypt; Israel; United Arab Emirates; Mongolia.

Key to the Chinese species of the genus *Pseudepipona*

- 1 Lateral carina of propodeum indistinctly tooth-shaped (Fig. 32); body mostly ferruginous and T2–T4 apically with whitish yellow bands (Figs 26–27)
..... *P. (P.) augusta* (Morawitz, 1867)
- Lateral carina of propodeum obviously tooth-shaped (Figs 5, 15, 23, 42, 50, 59–60); if body mostly ferruginous, T2–T4 apically without whitish yellow bands (Figs 1, 8–9, 18, 46, 53–54), or if body mostly black, T1–T4 apically with whitish yellow bands (Figs 35–36) 2
- 2 T1 basally with lateral short carina (Figs 17, 52) 3
- T1 basally without lateral carina (Figs 7, 25, 34, 45, 63–64) 4
- 3 Clypeus wider than long (Fig. 13); mesoscutum basally with two curved, comma-shaped ferruginous spots (Fig. 15) *P. (P.) kozhevnikovi* (Kostylev, 1927)
- Clypeus as wide as long (Fig. 48); mesoscutum wholly black (Fig. 49)
..... *P. (P.) lativentris* (de Saussure, 1855)

- 4 Body mostly sulfur yellow (Fig. 18); mesoscutum thoroughly with a M-shaped stripe and with sparse and shallow punctures, interspaces between punctures polished (Fig. 22) ***P. (P.) straminea* (André 1884)**
- Body largely ferruginous or largely black with apical whitish yellow bands (Figs 1, 35–36, 53–54); mesoscutum wholly black and with dense and coarse punctures (Figs 1, 5, 41, 59–60) **5**
- 5 Body largely black, T1 laterally with two large ferruginous spots, T1–T4 apically with whitish yellow bands (Figs 35–36, 45)
..... ***P. (P.) herrichii* (de Saussure, 1856)**
- Body largely ferruginous, T1 wholly ferruginous, T1–T4 apically without whitish yellow bands (Figs 1, 7, 53–54, 63–64) **6**
- 6 Pronotal carina medially prominent and flat tooth-shaped (Figs 59–60); T1 moderately punctate, T2 largely with few sparse and minute shallow punctures, and apically with dense minute punctures (Figs 63–64).....
..... ***P. (P.) przewalskyi* (Morawitz, 1885)**
- Pronotal carina normal (Fig. 3); T1 densely punctate, T2 wholly with dense and coarse punctures, punctures at the apex much deeper and bigger (Fig. 7)..... ***P. (P.) punctulata* sp. nov.**

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